

ICT in Higher Education in India : Concept, Benefits & Challenges

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ABSTRACT

One of the distinctive features of human beings is their ability to acquire knowledge, and what makes this knowledge an ever-thriving entity is man's ability to 'impact' this knowledge to others. Transfer of knowledge, which is one of the foundations of learning, is among the most fundamental social achievements of human beings.

Keywords: Ever-Thriving Entity, ICT, Higher Education

I. INTRODUCTION

The concept of moving the traditional classroom of desks, notebooks, pencils, and blackboard to an online forum of computers, software, and the Internet intimidates many teachers who are accustomed to the face-to-face interaction of the traditional classroom. In the past 10 years, online instruction has become extremely popular as is evident in the rise of online universities, such as University of Phoenix Online and Athabasca University (Canada), and on-campus universities offering online courses and degrees, such as Harvard University and University of Toronto. For many students who find it difficult to come to campus due to employment, family responsibilities, health issues, and other time constraints, online education is the only option and this problem also prevails in Indian Universities and Colleges.

Advancements, standards, specifications and subsequent adoptions have led to major growth in the extensibility, interoperability and scalability of e-learning technologies. E-learning is fast becoming a major form of learning.

Computer multimedia offers ideal opportunities for creating and presenting visually enriched learning environments. The latest technologies associated with virtual reality will also play an important role in not too distant future. Computer-based systems have great potential for delivering teaching and learning material.

WHAT IS ICT?- ICT is a force that has changed many aspects of the way we live. Information and Communication Technologies (ICTs) are referred to as the varied collection of technological gear and resources which are made use of to communicate. They are also made use of to generate, distribute, collect and administer information.

Information and Communication Technologies consist of the hardware, software, networks, and media for collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services. ICTs can be divided into two components, Information and Communication

Infrastructure (ICI) which refers to physical telecommunications systems and networks (cellular, broadcast, cable, satellite, postal) and the services that utilize those (Internet, voice, mail, radio, and television), and Information Technology (IT) that refers to the hardware and software of information collection, storage, processing, and presentation.

The main objectives of the paper are to evaluate the importance of ICT in higher education and to analyse the government initiatives for development of ICT in higher education.

ICT AND HIGHER EDUCATION- Education is perhaps the most strategic area of intervention for the empowerment of girls and women in any society and the use of information and communication technologies (ICTs) as an educational tool in the promotion of women's advancement has immense potential. The application of ICTs as a tool for effective enhancement of learning, teaching and educational management covers the entire spectrum of education from early childhood development, primary, secondary, tertiary, basic education and further education and training.

Integrating ICT in teaching and learning is high on the educational reform agenda. Often ICT is seen as indispensable tool to fully participate in the knowledge society. ICTs need to be seen as "an essential aspect of teaching's cultural toolkit in the twenty-first century, affording new and transformative models of development that extend the nature and reach of teacher learning wherever it takes place" (Leach, 2005). For developing countries like Vietnam, ICT can moreover be seen as a way to merge into a globalizing world. It is assumed that ICT brings revolutionary change in teaching methodologies. The innovation lies not per se in the introduction and use of ICT, but in its role as a contributor towards a student-centered form of teaching and learning.

The Information and Communication Technology (ICT) curriculum provides a broad perspective on the nature of technology, how to use and apply a variety of technologies, and the impact of ICT on self and society. Technology is about the ways things are done; the processes, tools and techniques that alter human activity. ICT is about the new ways in which people can communicate, inquire, make decisions and solve problems.

ICTs which can be in the form of videos, television and also computer multi media software, that merges sound, transcripts and multicolored moving imagery, can be made use of so as to make available stimulating, thought provoking and reliable content that will keep the student interested in the learning process. The radio on the other hand through its interactive programs utilizes songs, sound effects, adaptations, satirical comedies and supplementary collections of performances so as to induce the students to listen and get drawn in to the training that is being provided.

ICT IN TEACHING- Academics have taken to the use of computer in teaching much more readily than they adopted earlier audio-visual media. This is because the strength of computers is their power to manipulate words and symbols - which is at the heart of the academic endeavour. There is a trend to introduce eLearning or online learning both in courses taught on campus and in distance learning. Distance education and eLearning are not necessarily the same thing and can have very different cost structures. Whether eLearning improves quality or reduce cost depends on the particular circumstances. ICTs in general and eLearning in particular have reduced the barriers to entry to the higher education business. Countries and those aspiring to

create new HEIs can learn from the failures of a number of virtual universities. They reveal that ICTs should be introduced in a systematic manner that brings clarity to the business model through cost-benefit analyses.

ICT according to a number of commentators, enhance teaching, learning, and research, both from the constructivist and instructivist theories of learning. Behind this increasing faith in the role of technology in higher education however, lies implied acceptance of technology by various commentators, either as neutral and autonomous, neutral and human controlled, autonomous and value laden, or human controlled and value laden.

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

Large Class- The growth of mass higher education has made large classes an endemic feature of several courses at higher education institutions. Large class sizes make it difficult for teachers to employ interactive teaching strategies or to gain insight into the difficulties experienced by students. Large classes pose problems for all students but students who are under-prepared are particularly affected. It is these contexts that provide useful opportunities for educational technologies.

Increasing access to education- ICTs are a prospectively prevailing tool for developing educational opportunities, both prescribed and non-prescribed.

1. **Whenever, wherever:** One important characteristic of ICTs is their capability to go beyond time and space. ICTs make it feasible to achieve learning which is exemplified by a time delay involving the deliverance of instruction and its receipt by students which is termed as asynchronous learning. Course materials can be retrieved and used 24 x 7. An example that can be discussed here is that of Hughes Net Global Educations Interactive Onsite Learning platform which strives to characterize the future level of education which is called as Real Time Interactive education.
2. **Access to reserved educational capital:** With the advent of the internet and the World Wide Web, it is now possible to gain access to an unlimited amount of data and educational materials. Data in almost any subject and in diverse forms of media can be accessed from any place at different times of the day and by an unrestricted number of individuals. This is predominantly important for various educational institutions in the developing countries, and also for those educational institutions in developed countries that have restricted and outdated material in their libraries. ICTs, also enable access to the opinions of professionals, experts and researchers all over the world and allows one to be in direct communication with them.

External factors influencing the inner life of higher education institutions, including the use of ICT, can generally be distinguished into: economic, social, cultural, and technological factors as well as the changing role of governmental policy. ICT is both driving and enabling the processes toward a knowledge-driven global economy. It allows higher education providers to accommodate the specific needs of students in terms of mode, pace, place and time of study and to cater to different and new target groups and (niche) markets both locally and globally.

BENEFITS AND CHALLENGES OF ICT- While using ICTs in teaching has some obvious benefits, ICTs also bring challenges. First is the high cost of acquiring, installing, operating, maintaining and replacing ICTs. While potentially of great importance, the integration of ICTs into teaching is still in its infancy. Introducing ICT systems for teaching in developing countries has a particularly high opportunity cost because installing them is usually more expensive in absolute terms than in industrialized countries whereas, in contrast, alternative investments (e.g., buildings) are relatively less costly.

The four most common mistakes in introducing ICTs into teaching are: i) installing learning technology without reviewing student needs and content availability; (ii) imposing technological systems from the top down without involving faculty and students; (iii) using inappropriate content from other regions of the world without customizing it appropriately; and (iv) producing low quality content that has poor instructional design and is not adapted to the technology in use.

The other challenge faced is that in many developing nations the basic requirement of electricity and telephone networks is not available. Also many colleges do not have proper rooms or buildings so as to accommodate the technology. Another challenge is that the teachers need to develop their own capacity so as to efficiently make use of the different ICTs in different situations. They should not be scared that ICTs would replace teachers English being the dominant language most of the online content is in English. This causes problems as in many nations the people are not conversant or comfortable with English.

CONCLUSION- In the present era, many factors are bringing strong forces to bear on the adoption of ICTs in education and contemporary trends suggest will soon see large scale changes in the way education is planned and delivered as a consequence of the opportunities and affordances of ICT.

It is believed that the use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems. Extrapolating current activities and practices, the continued use and development of ICTs within education will have a strong impact on: What is learned, how it is learned, when and where learning takes place, & who is learning and who is teaching. The continued and increased use of ICTs in education in years to come, will serve to increase the temporal and geographical opportunities that are currently experienced.

Apart from having enabling telecommunications and ICT policies, governments and higher education institutions will need to develop strategies for effective ICT and media deployment and sustainability.

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